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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,075	06/09/2005	Kunihiro Fukuoka	0171-1212PUS1	8929
2292 7590 08/19/2009 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747				
EXAMINER COLE, ELIZABETH M				
ART UNIT		PAPER NUMBER		
1794				
NOTIFICATION DATE		DELIVERY MODE		
08/19/2009		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

### Office Action Summary

**Application No.**

10/538,075

**Applicant(s)**

FUKUOKA ET AL.

**Examiner**

Elizabeth M. Cole

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**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 2, 4-6 and 8-23 is/are pending in the application.
- 4a) Of the above claim(s) 4, 5 and 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 6, 8 and 10-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SI/08)
- Paper No(s)/Mail Date 7/27/09
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 6, 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Schuhmacher et al, U.S. Patent No. 4,310,373 in view of Wilkinson, U.S. Patent Application Publication No. 2002/0161137. Schuhmacher et al discloses a fabric (see examples), comprising thermally fusible polyurethane fibers. The fibers have a melting point of less than 180 degrees C. See col. 4, lines 15-25. The fusible fabric can be used in making garments such as raincoats. See example 1. Schuhmacher et al differs from the claimed invention because it does not disclose the claimed retention of tenacity after heat treatment at 100% extension. However, Schuhmacher et al teaches that the strength of the polyurethane fibers can be controlled through the choice of the diols employed. See col. 4, lines 34-63. Therefore, it would have been obvious to one of ordinary skill in the art to have controlled the strength and thus the tenacity of the fiber by selecting diols which produced a fiber having the desired strength through the process of routine experimentation. Schuhmacher et al discloses a polyurethane fiber as set forth above. Schuhmacher differs from the claimed invention because it does not teach the claimed method of obtaining the polyurethane elastic filaments. Wilkinson teaches that obtaining thermoplastic polyurethane elastic filaments by reacting a both ended isocyanate-terminated prepolymer prepared by the

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reaction of a polyol and a diisocyanate with a both end hydroxyl-terminated prepolymer prepared by the reaction of a polyol, a diisocyanate and a low molecular weight diol, (see paragraphs 0022-0024 and claim 10), wherein at least 50wt% of the starting polyol is a polyether polyol (paragraph 0035) produces polyurethane fibers having good tenacity and recovery, (see abstract). Therefore, it would have been obvious to have formed the polyurethane fibers of Schuhmacher by the process taught by Wilkinson, in order to obtain a material having excellent tenacity and recovery.

3. Claims 1-2, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schuhmacher et al, U.S. Patent No. 4,310,373 in view of JP 60-224847 and in view of Wilkinson, U.S. Patent Application Publication No. 2002/0161137. Schuhmacher et al discloses a fabric (see examples), comprising thermally fusible polyurethane fibers. The fibers have a melting point of less than 180 degrees C. See col. 4, lines 15-25. The fusible fabric can be used in making garments such as raincoats. See example 1. Schuhmacher et al differs from the claimed invention because it does not disclose the claimed retention of tenacity after heat treatment at 100% extension. However, Schuhmacher et al teaches that the strength of the polyurethane fibers can be controlled through the choice of the diols employed. See col. 4, lines 34-63. Therefore, it would have been obvious to one of ordinary skill in the art to have controlled the strength and thus the tenacity of the fabric by selecting diols which produced a fabric having the desired strength through the process of routine experimentation. Schuhmacher et al also differs from the claimed invention

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because while Schumacher et al does teach employing the thermoplastic polyurethane fibers as a bonding element in fabrics and garments made from the fabrics, it does not specifically teach that the fabrics are woven or knitted fabrics. JP '847 teaches employing bondable elastic fibers in fabrics which also comprise other non-elastic fibers and bonding by melting and fusing the elastic fibers at crossover points. See abstract provided by Applicant. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed the bonding fibers of Schumacher et al as bonding elastic fibers in other types of fabrics including woven and knitted fabrics as taught by JP '847. With regard to claim 2, it would have been obvious to have incorporated additional higher melting point polyurethane fibers into the garment, in order to assure the elasticity of the fabric by providing elastic fibers which would maintain their fiber structure completely at bonding temperatures. It is noted that a translation of JP '847 has been ordered and will be included with the next office action. Schuhmacher et al discloses a polyurethane fiber as set forth above. Schuhmacher differs from the claimed invention because it does not teach the claimed method of obtaining the polyurethane elastic filaments. Wilkinson teaches that obtaining thermoplastic polyurethane elastic filaments by reacting a both ended isocyanate-terminated prepolymer prepared by the reaction of a polyol and a diisocyanate with a both end hydroxy-terminated prepolymer prepared by the reaction of a polyol, a diisocyanate and a low molecular weight diol, (see paragraphs 0022-0024 and claim 10), wherein at least 50wt% of the starting polyol is a polyether polyol (paragraph 0035) produces polyurethane

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fibers having good tenacity and recovery, (see abstract). Therefore, it would have been obvious to have formed the polyurethane fibers of Schuhmacher by the process taught by Wilkinson, in order to obtain a material having excellent tenacity and recovery.

4. Claim 11-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schumacher et al in view of JP '847 and Wilkinson as applied to claims above, and further in view of Laycock et al, U.S. Patent No. 6,776,014.

Schumacher discloses forming fabrics of fusible polyurethane elastic filaments as set forth above, but does not specifically disclose the claimed fabric structures as set forth in claims 11-23. Laycock et al teaches that it is known to form knitted garments from a combination of elastic yarns such as polyurethane yarns as well as "hard" or non-elastic yarns. Laycock teaches that it is known to form such fabrics so that they comprise an elastic yarn in every course, or in alternating courses. Laycock teaches that it is known to form such garments with both bare and covered elastic strands. Laycock teaches that it is known to form such garments wherein the elastic yarns are plaited or knitted in. See the background of the invention section in Laycock, at col. 1, line 13 - col. 3, col. 4, line 39.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed the elastic yarns as disclosed by Schumacher and JP'847 as modified by Wilkinson to form various known knitted fabric structures as taught by Laycock. It is noted that the prior art teaches the claimed limitations of the elastic yarns and also teaches the various methods by which they can be used to form various knitted fabrics.

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5. Applicant's arguments filed 5/4/09 have been fully considered but they are not persuasive. With regard to the restriction requirement, applicant requests rejoinder of claim 5. However, the restriction requirement contained a typographical error since claim 5 was included with the product claims but claim 5 is clearly a process claim which depends on a withdrawn claim. Therefore, the request for claim 5 to be rejoined is not persuasive at this time. When allowable subject matter is indicated, process claims which are commensurate in scope with the allowed product claim will be rejoined. The examiner regrets the typographical error in the restriction requirement, but since claim 5 is clearly drawn to a process and is dependent on the withdrawn process claim 4, the restriction requirement is maintained and claim 5 is withdrawn.

6. Applicant argues that Schumacher does not teach the claimed specific amount of polyol. This argument is moot in view of the new grounds of rejection employing Wilkinson which was necessitated by the claim amendments.

7. With regard to Wilkinson, Applicant argues that Wilkinson does not teach the claimed amount of polyether polyol. However, the claims recite at least 50% of the polyol is polyether polyol. Wilkinson discloses a process which can comprise a polyester polyol. Wilkinson discloses at paragraph 0035 that all or part of the polyester polyol can be substituted with polyether polyol. Substituting all of the polyester polyol with polyether polyol would result in more than 50% of the polyol being polyether polyol.

8. Applicant argues that with regard to Schumacher, that the fabric of Schumacher does not have the claimed woven or knitted structure since in

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Schumacher the polyurethane fibers are bonded onto a base or carrier fabric. However, the claims which employ Schumacher without Laycock do not specifically recite a particular fabric structure other than a woven or knitted fabric comprising the polyurethane fibers. The structure of Schumacher meets these limitations since the underlying fabric is woven or knitted.

9. Applicant argues that there would not have been a reason or a reasonable expectation of success to combine the Schumacher and JP '487 references since the structures are different. However, JP 487 teaches an alternative way of using fusible elastomeric fibers such as those taught by Schumacher. Therefore, the person of ordinary skill in the art would have had a reasonable expectation that the fibers of Schumacher could have been used in a structure such as the knitted structure of JP '487, especially when modified by the teachings of Wilkinson to form a fiber having excellent tenacity and recovery.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be



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calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth M. Cole whose telephone number is (571) 272-1475. The examiner may be reached between 6:30 AM and 6:00 PM Monday through Wednesday, and 6:30 AM and 2 PM on Thursday.

The examiner's supervisor Rena Dye may be reached at (571) 272-3186.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

The fax number for all official faxes is (571) 273-8300.

/Elizabeth M. Cole/  
Primary Examiner, Art Unit 1794

e.m.c